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THE U. P. A. S. I.

(INCORPORATED.)

Contents.

The Scientific Department issues an article on "A Borer in Hevea Rubber" giving an example of its Depredation, Life History and Control. Though Mr. Green says "there is nothing to be alarmed about" still it would be advisable to keep a constant watch against its increase. Consistent hunting for it will save much trouble especially if labour should be scarce. The possibility of an increase, and the impossibility of coping with it at certain times, should be constantly kept in view.

It is to be noted by those interested in Sisal culture that the first crops are almost always poorer in quality than later ones. Also a succinct account of the Bougainvillea is given which extends our knowledge of this beautiful plant.

A very interesting paper by Mr. Harold Hamel Smith on "Farming by Dynamite" is reproduced, showing how extensively explosives are being used all the world over in agriculture, and promising a much larger future. That when the difficulties that hedge around its general use in India are removed, its use will become widespread in opening land, we are convinced. But it is on land growing tea, coffee and rubber we wish to see experiments made, and in connection with this we would call attention to Mr. Hindley's letter published in our last issue (May 3rd). The result of those experiments will be awaited with general interest. Mr. Hindley has very kindly promised to keep the Editor informed. We have no doubt of the result.

The Proceedings of two District Planters' Associations are published, those of the Shevaroy Planters' Association and South Travancore Planters' Association. We trust that the Circulars to be drawn up by the former and distributed amongst the mairasies and headmen of villages in the Salem District will have the desired effect, and counteract the pictorial attractions as depicted by their late visitant from Burmah.

THE SCIENTIFIC DEPARTMENT, U.P.A.S.I.

A Borer in Hevea Rubber.—A specimen of a big boring larva found in the root of a dying Hevea tree has recently been received with the following description of the damage done. "A tree looking quite fresh and healthy suddenly fell down and on examination it was found that all the side roots and tap root had been eaten up. There was only about six inches of tap root left in which the grub was found and for about six inches above ground the stem and bark were dry. Above that the bark was fresh, and so was the foliage; but when the bark was cut there was no flow of latex. From the appearance of the tree it looked quite healthy." The specimen was sent to the Government Entomologist, at Coimbatore for identification and he reports as follows:—"The larva is undoubtedly the grub of a *Cerambycid* (longicorn) Beetle, although it is impossible to say what the precise species is. These grubs bore as a rule in living wood and are quite capable of doing damage even up to the killing of the tree in which they bore. Possibly your larva may be *Batocera rubra*, but all these *Cerambycid* grubs have a strong family likeness and it is as yet impossible to distinguish between the different species in the larval stage. Assuming that your species is *Batocera rubra* the following is an account of its *Distribution*. Throughout Southern India seems to emerge at beginning of rains in May and October.

"*Life history.*—Eggs are laid in or under bark and the grubs tunnel into the stems or roots of the tree attacked. The larval stage probably lasts over a long time, possibly several years. When full fed it pupates in its tunnel; the pupal stage lasting about one month,

"*Food plants.*—Occurs commonly on Mango. Also attacks Duki Fig, Silk Cotton, (*Bombax Malabaricum*) and Hevea Rubber.

"*Control.*—Injection of a mixture of two parts chloroform to one part creosote into larval tunnels where accessible.

"Collection of adult beetle by hand. The beetles are often attracted by light at night. Even if your species is not *B. rubra* the general life history and control methods will be roughly the same. The large long antenna'd beetles should be looked for at the beginning of the rains and collected as far as possible. Any soft wood trees in or around the estate should be searched daily for them."

This beetle has been reported as a pest of Hevea in Ceylon (See P. C., VIII, p. 94), and in Trinidad it also attacks Cacao and Rubber. In the latter island it was recommended to remove all useless trees which serve as breeding and feeding places from the vicinity of estates. "Traps could also be employed for the capture of the insect. Such traps consist of lengths of the woods of the trees frequented by the insects while feeding or breeding. These are either suspended from the branches of the cultivated trees or placed endwise on the ground leaning against the trunks. Mature insects coming to the traps can be collected and destroyed, eggs deposited may be scraped off, and if any eggs should hatch the larvae would tunnel into the trap from whence they could be extracted, or the trap might be burned thus destroying the larvae it contains. The trunks and branches of cultivated trees among which the traps are placed should be well sprayed with an insecticide to protect them against attack and force the insects to resort to the traps for feeding and breeding. Lead Arsenate spray, 2 to 3 lbs. to 100 gallons of water, would probably be the best for this purpose.

The powder is first mixed with a sufficient quantity of water to make a thin smooth paste, all lumps being carefully pulverized, water is then added to make 100 gallons. White washing of the trunks and main branches may also afford some degree of protection."

This insect has also attracted attention in Ceylon and in *Bulletin No. 3 of the Ceylon Department of Agriculture* Mr. Green, the late Entomologist, deals with it at length, and I quote the following from this Bulletin.

"There is nothing to be alarmed about, but in consideration of the fact that a single grub may be responsible for the death of a well-grown rubber tree, and that one of the beetles may infect many trees, it will be prudent to give the matter some attention before it becomes really serious. It is indigenous in Ceylon, but has only recently had the opportunity of testing the edible qualities of the Hevea tree. With the great extension of rubber cultivation, it is only to be expected that various insects will accustom themselves to the new source of food. The injury may take two forms, either central or peripheral. In the former case the centre of the tap root is hollowed out. The tunnel may extend well up into the base of the stem, increasing in diameter as the grub grows larger. In the second case the attack is from the outside, usually at, or just below, ground level. Occasionally the point of entry may occur higher up on the stem. Irregular cavities are eaten through the bark and into the wood of the tree. The symptoms are usually obscure. There may be a gradual loss of foliage, but this is not readily distinguishable from the natural periodic defoliation. When the injury is below ground level the first intimation may be the collapse of the tree, which frequently breaks off at a point a few inches below the collar. Or, in sheltered situations, the tree may gradually die and dry up. The method of entry in cases of external attack is a comparatively simple matter. The eggs are deposited in deep cavities of the bark and in wounds especially such as have been induced by canker. The adult beetle is a large and conspicuous insect when seen by itself but its scheme of colouration harmonizes perfectly with the bark of the trees upon which it habitually rests. It is of a dull olive brown colour, with a few reddish spots on the back of the thorax and wing covers. The wing covers are thickly specked on their basal half with minute prominent black spots, and there is a small but conspicuous and sharply defined white-shield-shaped patch at their junction. There is a broad white band on each side extending the full length of the body. The antennae and legs are darker brown. The antennae are long and stout extending far beyond the extremity of the body. The thorax is armed on each side with a sharp, stout, thorn-like process and there is a smaller but similar process on the shoulder of each wing cover.

"The destruction of each individual beetle of this species may possibly save the lives of a dozen rubber trees. It is unlikely that they occur in any considerable numbers, and it would be useless to employ coolies solely to collect the insects. But it would pay to offer a small reward for each beetle of this kind that may be brought in by the tappers or scrap collectors. If the eggs are deposited in wounds and in cankered patches of bark it will be important to safeguard these possible points of entry by cutting out all diseased patches and tarring the exposed surfaces. The same treatment should be applied to accidental wounds. Tapping wounds, especially those made by the paring system, are so constantly disturbed that there is little chance of the pest being able to establish itself in those spots. And wounds caused by pricking are automatically sealed by coagulated latex."

The beetle is quite common in the plains of India and several specimens have been sent into this office from time to time. A watch should be kept for it on rubber estates and should it ever become troublesome the above information will prove useful.

Sisal.—The following information is extracted from *The Rubber World* of 17th April and may be of value to those who are experimenting with this product in Southern India.

"It is pointed out by Mr. L. H. Dewey, from experience gained in Hawaii, that the first harvest of leaves from the maguey and sisal plants is always of a much poorer quality than subsequent harvests. This is due to the fact that the first and oldest leaves are always considerably shorter and often more damaged than the later ones, besides being often partly dried up. For these reasons the first crop of fibre is both too short and improperly cleaned, and by no means represents the quality of the subsequent crops. Besides, such crops almost invariably leave in the minds of buyers a bad impression which may take several crops to overcome. In order to avoid such occurrences the Philippine agricultural authorities suggest that the producers of these fibres, especially those who use or intend to use machinery for cleaning the fibre, should be careful in so marking their first crop as to show that it is not a representative sample of subsequent crops, thereby avoiding future sacrifices on their part."

Bougainvillea.—I have often been asked for the history of this plant which is such a well known feature of Indian Bungalow compounds both in town and district, and I am indebted to the *Gardeners' Chronicle* for the following information about this beautiful shrub, the botanical name of which is *Bougainvillea Sanderiana*.

"The famous French navigator, LOUIS ANTOINE DE BOUGAINVILLE (1729-1811), has a splendid monument to his everlasting memory in the Brazilian shrub which his botanical friend and fellow-countryman, Commerson, discovered and named after him. In all tropical and sub-tropical countries where flowers are cultivated, Bougainvillea has become an established favourite. Its glories are sung by travellers, and even globe-trotters are roused to enthusiasm when they first see it in some sunny clime. Madeira is now almost as famous for its Bougainvillea as for its wine and bananas, and the plant is said to be equally popular at other ports of call in the warmer parts of the world. Like many other plants, Bougainvillea thrives particularly well near the sea. It is most probable that the several varieties or species known in English gardens are sports which originated in tropical gardens. The famous brick-red *B. latifolia*, the best form of which is called *Rossa Catelina*, probably originated in Madeira, where there is a very old plant with an immense stem hanging over an ancient garden-well at Quinta Sant Andrea, which "for many years has borne its burden of blossoms and called forth the admiration of untold numbers of tourists through successive winters." This refers to *B. latifolia*, *Rosa Catelina* having been obtained, we are told, from Las Palmas Grand Canary, by Colonel PETRE, Westwick House, Norwich. This gentleman showed a large flowering branch of it at a meeting of the R. H. S. in April 1909, when it was awarded a first-class certificate. These two, with *B. Sanderiana*, *Maud Chettleburgh*, and *B. Cyperi*, are no doubt sports from *B. glabra*, which differs from the other recognised species, and *B. spectabilis*, both in having almost glabrous, comparatively small leaves, and in its time of flowering. The variety Cinnabar, a red-flowered sport from *B. spectabilis*, said to have originated in Palermo, has lately been named *B. Lindleyana*."

R. D. A.

FARMING BY DYNAMITE.

By HAROLD HAMEL SMITH, EDITOR OF THE "TROPICAL LIFE."
*A paper read at the Third International Rubber Conference
held in New York, 1912.*

While I have long suspected the possibilities of explosives in connection with agriculture, especially in the tropics, it has been only during the last twelve months that I have been able to satisfactorily demonstrate how very useful dynamite, and the other "ites" can prove, when used with discretion and by trained natives or Europeans. By their use both time and money can be saved, and better work done, both as regards the soil and the crops.

As regards the handling of these high explosives by natives, I would consider that any race or tribe which is intelligent enough to be trained to tap rubber trees, or extract pulque from the maguey plant as is done under the direction of white supervisors, could be trained to handle these explosives drill the holes, and pack in the cartridges under the same class of white directors as with the rubber tapping.

I did intend to devote my paper to "Rubber Seed oil," a subject to which I have given a considerable amount of attention of late, but have chosen the question of "Farming by Dynamite" instead, as it is more widespread and international in character, and is of special interest to an Anglo-American Tropical Congress. On account of the now widespread use of explosives on cultivations; I would first state that if I do not include the names of the leading centres which have latterly been using or experimenting with them for breaking up soils (some of the farmers in the Western States of America have, I understand, regularly blasted their ground for twenty or thirty years past, and obtained bumper crops thereby), nor mention the names of all the leading journals that have been good enough to open their columns to discuss the matter, it is not for want of appreciation on my part of the important share that they have taken in helping us to become "At Home" with the use and handling of explosives, but for lack of space and time at my disposal and yours. I must, on the contrary, be far more brief than pleases me, for this is a subject which, the more it is discussed, the more one can realize what can be done with dynamite, and hence the more one would like to say on its use.

Dynamite or other explosives—and for the sake of brevity let me say "right here," that every time I use the word dynamite I mean to infer "or other explosive if more suitable"—can be used with advantage in agricultural industries for the following reasons:—

1. To break up hard or virgin soil to facilitate ploughing; and especially to break up the under-crust, when present, which no plough could penetrate, at any rate no plough used by the average farmer or planter.

2. To blast out for removal, boulders, or rocks, and especially tree stumps, whereby not only is the risk of root disease removed, to be easily and properly ploughed; which otherwise would be impossible in a satisfactory manner, if the stumps or rocks are left *in situ*.

3. For clearing the soil of pests, destroying ants' nests, or rabbit warrens, etc., etc., as well as for regenerating and aerating hard or worn-out soils generally—as the sugar-lands on some of the West Indian estates which are not ploughed, but only hoed, i.e., the surface only scratched over, but the hard pan sub-soil is left year after year, and so becomes waterlogged and airless; hence dangerous.

4. For throwing up the soil for drains, especially deep gullies, and facilitating its removal by ploughs or hand.
5. For making holes for tree planting, and at the same time loosening the soil, which is a great advantage; also for fence-post holes, or for setting uprights for buildings, etc., in position.
6. For well-boring, or well-torpedoing—*i.e.* for increasing the flow from an artesian well by exploding a charge at the bottom of a well, to widen the aperture, and break up the ground, to let further supplies of water (or oil, if an oil-well) come through.

As time goes on, many other uses on the estates will, no doubt, be found, but as I do not pretend to have an exhaustive knowledge on the subject, I think I have said enough. Of course, I do not pretend to touch on the use of explosives for mining, since I speak only from the agriculturist's point of view: not even of their utility for removing large masses of rock or soil for making estate roads, as the latter, although not uncommon, is too big and dangerous a task for the average planter, and should not be carried out without consulting an expert, one of whom now-a-days is to be found at all large centres, especially in the neighbourhood of mines.

"It must not be thought that dynamite obviates the necessity of top ploughing," very truly points out the *Queensland Agricultural Journal*: "Far from it. The plough must be used just as much as ever. The only difference is, that the dynamite expends its disintegrating force in the sub-soil, which is never touched by the plough, so that one is not merely planting the crops in the same soil year after year," but can, by its use, enable the crops to draw up their nutrient from below. Where clay sub-soils form a water seal, the use of explosives, if correctly applied, breaks up the clay strata and so allows the accumulated and stagnant water to pass through (at the same time the explosion kills myriads of harmful lives), and dissolving the plant foods in the lower, and hitherto inaccessible strata, liberates it in such form that it can be drawn up by capillary attraction, and pass through with the now non-stagnant water to be assimilated by the crops. May I remind you here—as I reminded the readers of my book on "Cocoanuts"—of the need of regular, adequate supplies of water at all times, if you want good crops. Water is necessary, and therefore should constantly be at the disposal of the crops (provided, of course, if not in over supply), to convey the plant's food in soluble form up to the crown. The quantity of such food assimilated or digested by the plant is roughly proportional to the amount of water which it absorbs—provided, of course, that the food is there to be absorbed; but the food alone is no use; without the water it cannot pass up the trees or plants and nourish them.

"Farming by dynamite," wrote the (London) "World's Work" last April, has gripped the United States and is spreading through Canada and Mexico like a prairie fire. "The farmers who have tried it, swear by it, and are upheld by the leading authorities in agricultural science." I can confirm this from the tropics. Since I first drew attention to the use of high explosives in tropical and sub-tropical agriculture by reviewing a book (*The book of 'High Explosives.'*, published by the Nobel Explosives Co., Ltd., Glasgow), I have received innumerable applications for copies of the book and further information on the subject, right up to the time of writing these notes, which I stopped doing to, order a copy to be sent to a cacao planter in Una, State of Bahia, Brazil. The "*Queensland Agricultural Journal*," already quoted, evidently found the same thing, for the editor writes:—"Since the publication of our articles on the value of dynamite as an aid in clearing land, and to subsequent agricultural operations,

judging by the numerous letters we have received from farmers and fruit growers seeking further information on the subject, much interest—we might almost say enthusiasm—has been aroused in many parts of the state in connection with the use of dynamite on the land;" while the "Times of Ceylon" quotes the following instance of its use for rubber "planting by a Kelani Valley (Ceylon) rubber planter, using only ordinary dynamite cartridges: "First of all he used a quarter of a cartridge, then a half, and then a full one, and kept data of the area of ground disturbed when the quantities of dynamite had been fired. The plough only breaks up the top surface so that the water minglest and dissolves the plant nutrient to a depth only of a few inches. The sub-soil, however, remains intact, and the roots of the crop have to feed upon what they can obtain from the land broken up by the plough. But breaking the land up by dynamite disturbs it to a depth of several feet, letting in the water which dissolves the essential nutrient, while the roots are able to descend to a greater depth and thus secure their fill of food. Again, the roots are allowed to grow downwards and not laterally; thus they do not encroach on the feeding areas of the adjacent trees, which is the case when there is only a top shallow layer of porous soil.

"The planter in question, we understand, has applied the new method to five acres of land and planted rubber trees therein. It is, of course, too early yet to judge the results in the growth of the plants. If the results are as good as anticipated it is very likely that the method will be widely adopted in Ceylon. The Red Cross dynamite was mentioned in the article which we quoted, but these not being procurable, ordinary dynamite cartridges were used in this case.

"Now that a local planter has started the method here," continued the paper, in its comments on the experiment, "it will not be out of place to quote one section of a recent article on the subject, which is of especial interest to planters: "Possibly what at first sight appears to be the strangest application of dynamite is for the purpose of planting trees, yet its success in this connection is peculiarly remarkable. When a hole is made with a spade the surrounding soil is left in its hard condition. The result is that the roots find it difficult to start. They are cramped in the tight quarters of the hole and cannot pierce the surrounding hard wall of earth. Under these circumstances growth is appreciably retarded for a considerable time. With dynamite a large clean hole is blasted out and, in addition, the soil on all sides is loosened for five or six feet. When the tree is planted the young and tender roots force their way without effort through the crevices, sucking up nourishment, and commence to grow from the moment they are set, without any retardation whatever." Those qualified to speak upon the subject are of opinion that this will bring trees forward at least a year sooner than those planted under the old conditions."

"A new profession has arisen of expert dynamite farmers," says *The Wealth of India*, when commenting on the article in *The World's Work*: "dynamite is used for planting trees. The spade-made hole leaves the surrounding soil in a hard condition, and the roots find it hard to start. With dynamite a large, clean hole is blasted out, and the soil on all sides is loosened for five or six feet, thus enabling the trees so planted to grow twice as quickly as those set in the usual spade holes."

"We heartily commend the subject of 'Farming by Dynamite' to our readers"—writes the Editor of *Grenier's Rubber News*, at Kuala Lumpur, right at the heart of the plantation rubber industry in the Far East. "The consensus of opinion at least among planters of the Federated Malay States, is that clean-clearing, which means the removal of all stumps and timber, is

of paramount importance, and we feel sure that a perusal of the methods discussed" (in an article they published) "will convince planters that at last there is material available to accomplish the work expeditiously and economically."

"In South Africa," reports the *Home and Colonial Mail*—well-known throughout India and the East—"experiments in ploughing by dynamite are becoming quite popular. It is claimed that operations can be carried out without injuring crops, and demonstrations are now taking place all over the Union with object of fostering agriculture. The cost per acre is said to work out at between £2 10s. and £5 according to the nature of the soil and trees. Dynamite can be used for ditching, for constructing irrigation furrows, and other farming purposes."

All the leading papers in the rubber producing world, as well as those devoted to planting interests elsewhere, recommend attention to the use of dynamite for estate work. Its use especially appeals to me for out-of-the-way sections, and especially in Latin America, where the transport, even of the lightest make of ploughs, is difficult and costly, often impossible. In countries where the *tschise* or other pest discourages the use of draught animals, the use of explosives should rapidly increase. Possibly the shocks, if not the actual explosions, might diminish the pests, especially if steps were taken to attract them to the spot by bait, in the shape of food to which they are partial. In locust infested soils, the numbers of these pests, at all stages, even when in flight, could be greatly reduced by organised explosions to greet them with a *fun de joie* whether in the soil as grubs or flying over it. But there is no need to extend the list. You, whom I am addressing, are far more able than myself to think them out. I would, however, say in conclusion, that planters of cocoanuts, fibres, Ceará rubber, and other crops which can be grown to advantage, when scientifically cultivated, in almost semi-arid districts, will find the use of explosives a great aid as the following letter, written from Kalkudah, in the Eastern Province of Ceylon, to the Editor of the *Times of Ceylon*, (see their issue of June 20, 1912) tends to prove: —

"I read with great interest the articles re 'Farming with Dynamite' in the *Times of Ceylon*. I believe this method will gain popularity in the Eastern Province, as there is a slab of coral from the coast here to one-and-a-half miles inland, or further, and this runs from 2 to 9 ft. below the surface, in some places measuring 18 to 24 in. in thickness. It is not porous, but in some parts is soft and limy. There is water immediately below this slab, but the coconut roots cannot get to the water, and the trees are therefore greatly affected by the drought, and large sums of money have to be expended in watering plants. One notices patches of cocoanuts, old enough to give large crops, looking sickly, with not even a blossom on them. This is mainly due to the existence of this slab, which had not been broken through before planting out. Dynamite blasting will do more for these than tons of manure. A hole drilled in between every four plants through this slab and blasted with dynamite will crack up this slab, and enable the roots to find their way to the water, which is just underneath it."

"Again one finds that, after rain, the water remains in some places for weeks on the surface, affecting all the trees or plants in that area. This, too, would not occur if the slab were broken up, as the water would find its way through the cracks. In some places here, where this slab was broken through before planting out, the plants require very little watering, and the bearing trees are healthy and full of crop even during the severest drought. The method used in these places is to cut down to the slab and break it with pick-axes at a prohibitive cost. If holes could be drilled and dynamite

used, the breaking up of the slab will be much greater and the cost less than half. Perhaps the cost of boling with dynamite and planting will be slightly higher, but there will be a great saving in watering, and the chafes given to plants to strike root and bring them earlier into bearing will amply repay this. Even in bearing field where this slab occurs it would be well to have it broken up a little and allow the roots to find their own water.

"It would be interesting to hear of results of a few experiments and also have the views of some of the veteran planters of the Eastern Province on the subject."

In conclusion, I hope to see further reports on the matter, not only over cocoanuts, but in connection with rubber-planting and tropical agriculture generally. Meanwhile there is no doubt that explosives have not only come to stay as a necessary auxiliary to modern agricultural science, but their use will extend on all sides until they occupy a prominent position therein.—*The India Rubber World.*

DISTRICT PLANTERS' ASSOCIATIONS.

Shevaroy Planters' Association.

Proceedings of a Special General Meeting held at the Victoria Rooms, Yercaud, on 30th April, 1913.

PRESENT.—Messrs. J. H. Bradshaw, J. A. Cochran, R. Gompertz, S. M. Hight, W. W. Hight, A. B. Kandaswamy, C. G. Lechler, L. Rochet, C. Rahm, W. Rahm, F. Pegge, F. D. Short, G. Turner and Ch. Dickins (Hon. Secretary and Chairman). **Visitors**—Messrs. T. Bainbridge Fletcher (Government Entomologist) and H. Whittle.

(1.) The notice calling the meeting was taken as read.
 (2.) The Chairman in a short speech welcomed Mr. Fletcher to the meeting and referred to the experiments regarding the fertilization of Coffee blossom being carried out by Mr. Fletcher. Mr. Fletcher kindly answered a few questions put to him by the members, after which the business of the meeting was proceeded with.

(3.) *Muhammadan and Hindu Burial Ground.*—Read letter, dated 20/3/13 from the Dy. Tahsildar, Yercaud. The Honorary Secretary informed the Dy. Tahsildar that the side selected had been mentioned in an appeal to the Collector and District Magistrate, Salem, by the Residents of Yercaud. Steps adopted approved of by the meeting.

(4.) *Petty Bazaars Springing up in Yercaud and Other Parts of the Shevaroys.*—Read letter, dated 22nd April, 1913 from the Dy. Tahsildar, Yercaud. Members were requested to send in to the Honorary Secretary, as soon as possible, the names of bazaar-holders and the number of bazaars in their respective localities, attention having been called to the urgency and importance of the case.

(5.) *Scientific Department.*—Read Circular No. 2/13, dated 19th February, from the Secretary, U. P. A. S. I., re. the continuation of the Association Contribution to Scientific Department for the next 5 years, also Honorary Secretary's reply thereto promising same, which was approved of.

(6.) *Recruiting in a Planting District.*—After considerable discussion on the subject the following gentlemen: Messrs. C. G. Lechler, G. Turner, C. Rahm and Ch. Dickins were appointed a Sub-Committee to draw up a Circular for distribution to Maistries and Headmen of villages in the Salem District.

(Signed) **CHAS. DICKINS,**
Hon. Secretary, S.P.A.

South Travancore Planters' Association.

*Proceedings of the Second Quarterly Meeting held in the Club,
Quilon, on Saturday, April 26th, 1913.*

PRESENT.—Mr. A. W. Leslie (Chairman), Messrs. H. S. K. Morrell, T. P. Alexander, S. A. Martin, H. Irvine and H. C. Seymour, (Honorary Secretary.) . By Proxy.—Messrs. E. Lord and J. B. Cook.

Agenda Papers —

1. Confirm Minutes of last Meeting,
2. Election of a Chairman for 1913.
3. "Cooly Rates.
4. Election of a Delegate for Bangalore.
5. Correspondence.

and any other business properly brought before the meeting.

The minutes of the previous meeting were read and confirmed.

The next business on the Agenda was the election of a Chairman for 1913, Mr. Lord who was elected at the Annual General Meeting held in February being unable to accept the Chair.

Proposed by Mr. Morrell and seconded by Mr. Leslie: "That Mr. Brander be elected Chairman." This was carried unanimously.

Cooley Rates.—After a lengthy discussion it was proposed by Mr. Morrell and seconded by Mr. Alexander: "That there be no fixed rates."

Bangalore Delegate.—Proposed by Mr. Leslie and seconded by Mr. Morrell: "That as no delegate was sent in 1912 that Mr. J. B. Cook be asked to go."

Correspondence.—A letter was read from the Secretary, U. P. A. S. I. asking whether this Association be prepared to keep on the Scientific Officer for another five years. Proposed by Mr. Leslie and seconded by Mr. Morrell: "That the present contribution be continued for another year at least and that the Honorary Secretary write to the outside members to enable a date to be fixed for Mr. Anstord to visit the district once a year."

No reply being received with reference to the robbery on Ambanaad Estate it was proposed by Mr. Leslie and seconded by Mr. Alexander: "That the Police authorities be written to again on the matter."

This being all the business the Meeting closed with a vote of thanks to the Chair.

(Signed) HUGH C. SEYMORE,
Honorary Secretary.

AGRICULTURAL EXPLOSIVES IN NEW ZEALAND.

Following the recent examples of South Africa and Australia, the officers of the New Zealand Government Agricultural Service are endeavouring to popularise the use of explosives in land cultivation.—*Commercial Intelligence.*

TEA.

The Indian Tea Industry.

The London *Times*, in an article on the "Indian Tea Industry," makes the following interesting comments on the present position:—

The growing importance of our Indian and Ceylon tea-planting industries, which now supply the world's consumers with about 490,000,000 lbs. out of the 720,000,000 lbs. more or less, annually required, and the attention that has been drawn to them of recent years as a desirable channel for investment, lend interest to the movements that appreciably changed the position and out-look of the tea market during the last two or three months, and raised the value of tea at the end of February to a higher average level than has been experienced for many years.

In our annual review of 1912 we recorded how the liability of the tea trade to be affected by unforeseen developments had been illustrated by the substantial decline in prices that occurred in the middle of the year, and we drew attention to the extreme sensitiveness of the market to comparatively slight changes in the balance between supply and demand, exemplified in 1911 by the inflation of low-priced tea through fear of a rather short supply, and in 1912 by its depression because there seemed to be a little too much of it. The relapse of the past fortnight shows that the market is still very sensitive, average auction prices last week 8'81d. for Indian, 9'18d. for Ceylon and 7'55d. for Java.

When it was necessary, three months ago, to analyse the position and examine the outlook the conclusion was reached that a recovery in value might come to pass later on, but could not safely be predicted as near at hand—for reasons set forth in detail. It has already taken place, however, brought about by a sudden and general recognition by the principal buyers of tea that a change was impending in the conditions that govern prices, and by the tendency to anticipate movements instead of waiting for them to take place.

The advance in prices was so general, and affected so many interests that it is worth while registering its extent. This can be done by contrasting the average of the prices obtained in February by the producers who sell their Indian, Ceylon, and Java tea at the London public auctions with the prices paid for them during the corresponding month in other years, with the following result:—

February Value.	1909.	1911.	1913.
Indian	8'40d.	9'80d.	9'25d.
Ceylon	8'35d.	8'75d.	9'30d.
Java	7'50d.	8'20d.	8'0d.

This marked recovery in the value of Indian and Ceylon tea places all our producers in a much better position than they were in six months ago.

But whilst a fresh and better outlook opened before the growers of tea, the reverse was the case with distributors and retailers in general, who had to face the higher cost with but little prospect of being able to raise the price charged to the public, owing to the strenuous competition between the large vendors of cheap tea. This would be especially felt by those who had resumed the sale of tea at 1s. the pound, which may have to be suspended later on, the 14d. tea made the lowest quoted again, and no tea eagerly pushed for sale for less than 16d., whether the Chancellor of the Exchequer be able to make any reduction in the duty or not and for this reason—namely, that whenever the duty is lowered the market price of tea in Mincing Lane will advance, unless it has been discounted by a rise in prices beforehand,

The investigation steadily pursued through the records and details of the export business of the various producing countries in the East and of the requirements and purchases of the consuming countries and markets almost everywhere warrants the conclusion that the popularity of tea as a beverage, the trade inquiry for it, and the ability of consumers who most want it—namely, the world's hard workers—to find the money to pay for it are steadily growing, and in various directions. The statistics to illustrate this that have accumulated during the last few months are too voluminous for citation; nearly all countries seem to be wanting more tea than heretofore, but there is one that has been the particular factor of the changed position—namely, Russia, whose heavy purchases in the Calcutta market coincidently with active bidding for tea in London started the present rise. It is interesting to recall the fact that a similar demand from Russian buyers at the close of 1910, and its resulting deflection of supply from London was the cause of the advance in 1911. It is also of particular importance to notice that, when more tea is wanted now, it is to India that the buyers turn, then to Ceylon, or to Java if supplies of British-grown tea are inadequate or dear. These three countries are increasing the quantity produced and sold, whilst China's sales have reduced nearly 12,000,000 lbs. this season and Japan's industry makes no progress in the way of expanding exports.

But whilst the Russian demand was the principal cause of the advance, it has not been the only one, for coincidentally with it came from India tea of better quality than before, then bad weather in Ceylon to temporarily shorten the export, a stoppage of the excessive output in Java, with a return to normal yield at the close of 1912, reduced receipts at the Port of London, with heavier deliveries for home use and export—the result of it being that instead of stocks in bond being 23,000,000 lbs. larger as they were at the end of November they are now of quite moderate and manageable dimensions.

In spite of the relapse since February the position may be said with some confidence to be one of hopefulness for our producers in India and Ceylon, partly by reason of its statistical soundness, but mainly because of the evidence that their tea is now almost everywhere recognized to be the best to buy. Apart from questions of taste which leads some consumers still to prefer other varieties but is a steadily diminishing influence—under the universal system of "blending" tea before retailing it, which obliterates or disguises distinctive flavours—the general verdict of tea tasters and traders is that our teas are the most economical, and it is economic value now, rather than taste, that turns the scale.

It would be well for the growers in India and Ceylon that the market value of tea should not relapse further, because it is difficult to see how a gradual increase in the cost of production can be avoided, although the effect of it is doubtless neutralized by the increased productiveness of highly cultivated estates that engage sufficient labour and spend money in manuring. There is a tendency for all but the fixed charges to increase; machinery implements, foodstuffs, carriage and freight, warehouse and dock rates, tend to be dearer, not cheaper, while there is the chance that the world-wide movement that is raising the status of the manual labourer, whatever be his colour, will extend to the coffee that tea-planters employ, and that the form in which it will finally find expression will be, in addition to the better accommodation now so generally provided, a higher daily wage, perhaps paid direct into his hands if he has earned it; and it is quite possible that in return for it the planter will get more strenuous and regular service.—*The Indian Planters' Gazette and Sporting News.*